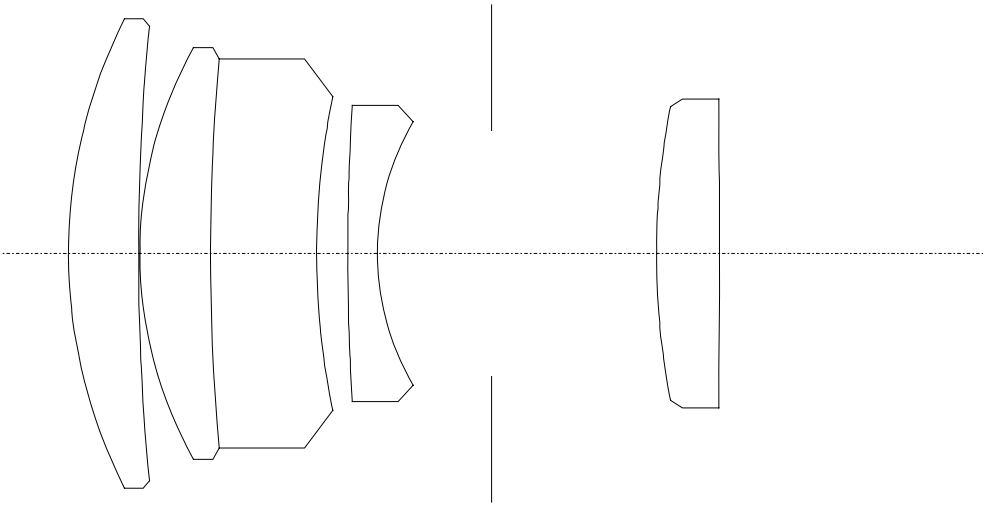
The LEICA SUMMARIT-M 90 mm f/2.5 is a versatile telephoto lens that rounds off the new lens speed class of Summarit-M lenses. Despite being much more handy and lighter than the comparable 90 mm Summicron lens, it offers outstanding optical and mechanical quality. Even at full aperture, this lens demonstrates excellent imaging capability with outstanding contrast over the entire image field. A slight reduction in quality can only be seen in the corners - which are not even captured by the slightly smaller format of the digital LEICA M8 - but even this can be improved significantly by stopping down to f/5.6.

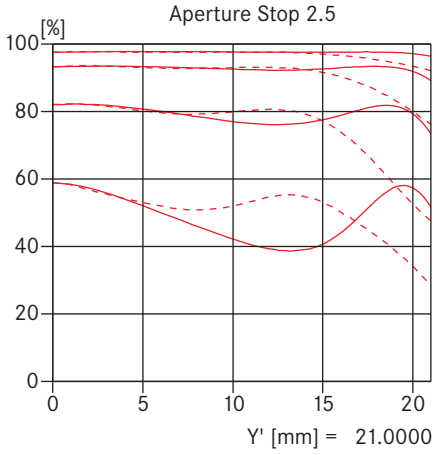
Lens shape

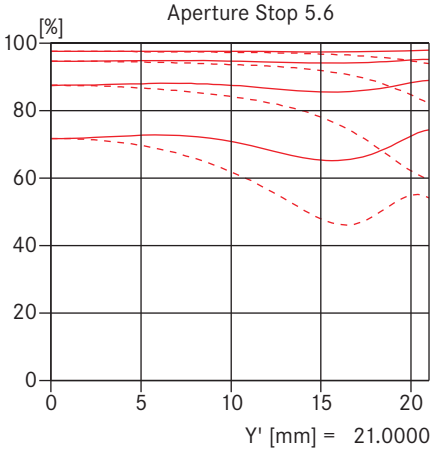


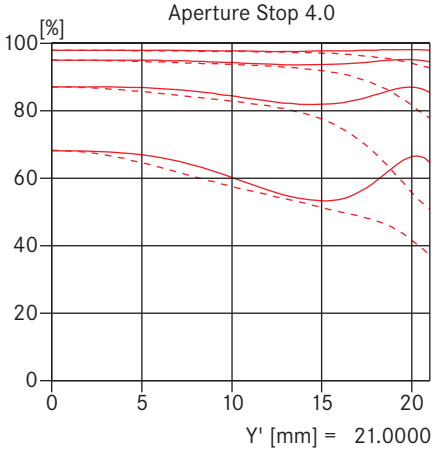
Engineering drawing

Technical Data	
Angle of view (diagonal, horizontal, vertical)	For 35 mm (24 x 36 mm) : 27°, 22,6°, 15,2°, for LEICA M8 (18 x 27 mm): 20,4°, 17.1°, 11.4°, corresponds to a focal length of approx. 120 mm with 35 mm-format
Optical design	**Number of lenses/groups:** 5 / 4 **Focal length:** 91.0 mm **Position of entrance pupil:** 54,8 mm (related to the first lens surface in light direction)
Distance setting	**Focusing range:** 1,0 m to endless **Scales:** Combined meter/feet graduation **Smallest object field/Largest reproduction ratio:** For 35 mm, approx. 213 x 320 mm/1:8.9; for LEICA M8, approx. 160 x 240 mm/1:8.9
Aperture	**Setting/Function:** Preset, with click-stops, half values available **Lowest value:** 16
Bayonet	Leica M quick-change bayonet with 6 bit lens identification bar code for digital M models
Filter mount /Lens hood	Non-rotating, internal thread for screw-on filterssize E46, external thread for lens hood, protection ring for external thread included in delivery, lens hood available as accessory
Dimensions and weight	**Length: approx.** 66.5 mm **Largest diameter:** approx. 55 mm **Weight:** approx. 360g

MTF graphs





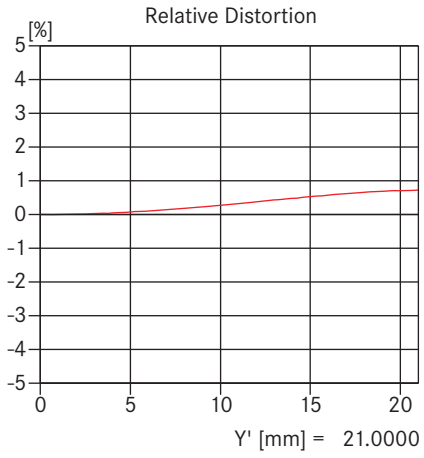


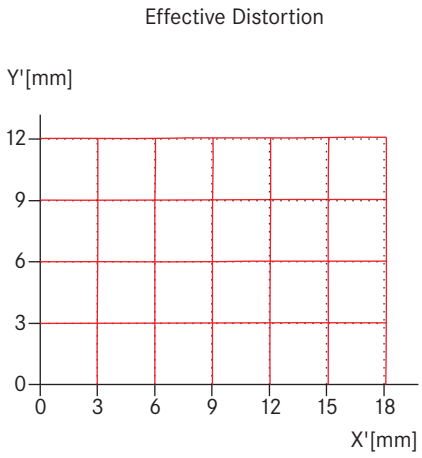
The MTF is indicated both at full aperture and at f/5.6 at long taking distances (infinity). Shown is the contrast in percentage for 5, 10, 20 and 40 lp/mm accross the height of the 35 mm film format, for tangential (dotted line) and sagittal (solid line) structures, in white light. The 5 and 10 lp/mm will give an indication regarding the contrast ratio for large object structures.The 20 and 40 lp/mm records the resolution of finer and finest object structures.

sagittal structures

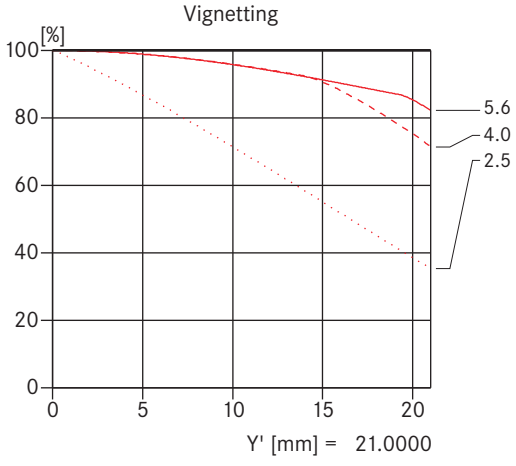
tangential structures

Distortion





Vignetting

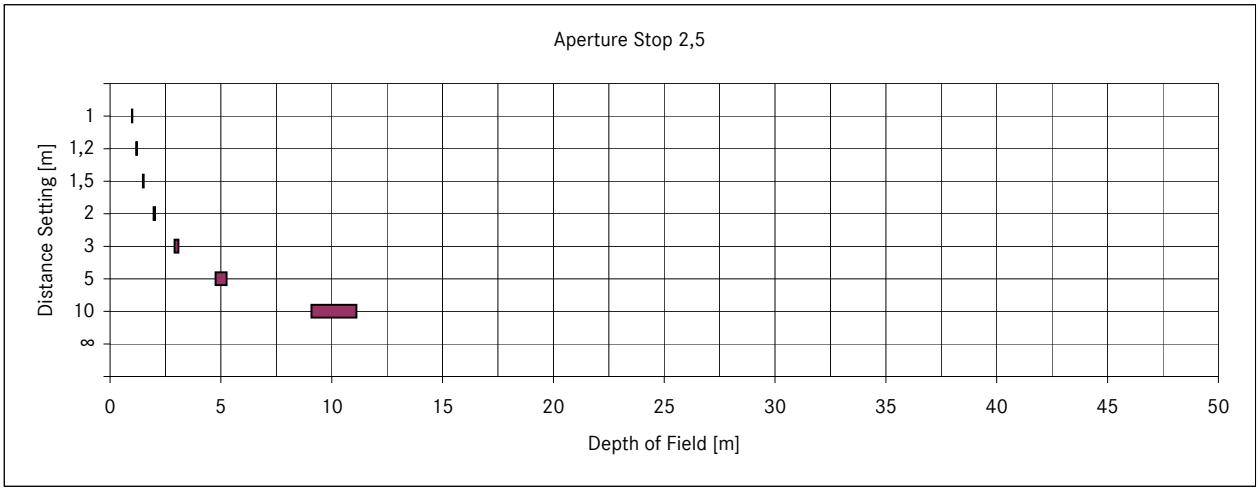


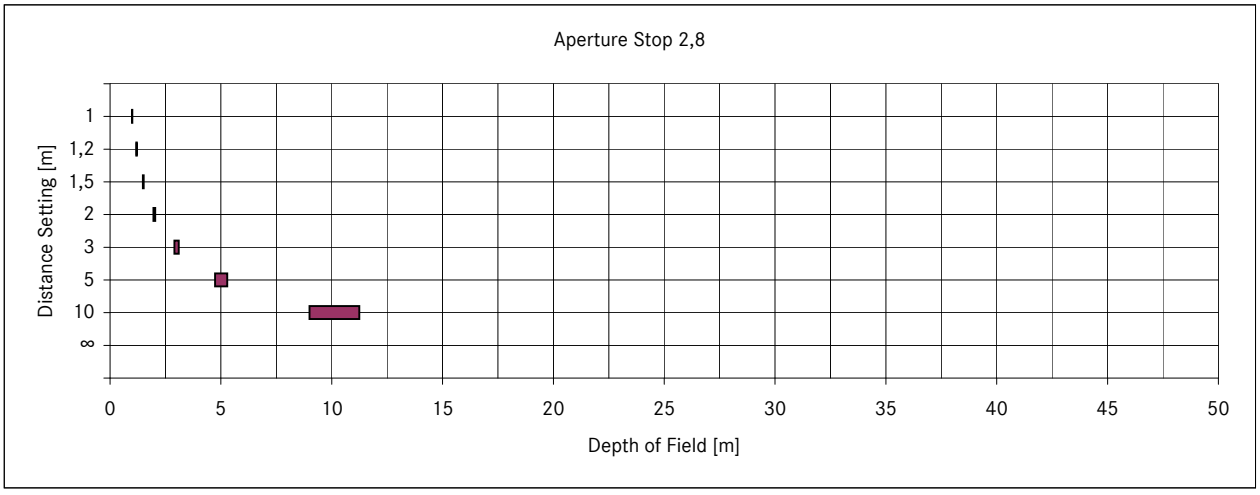
Distortion is the deviation of the real image height (in the picture) from the ideal image height. The relative distortion is the percentage deviation. The ideal image height results from the object height and the magnification. The image height of 21.6mm is the radial distance between the edge and the middle of the image field for the format 24mm x 36mm. The graph of the effective distortion illustrates the appearance of straight horizontal and vertical lines in the picture.

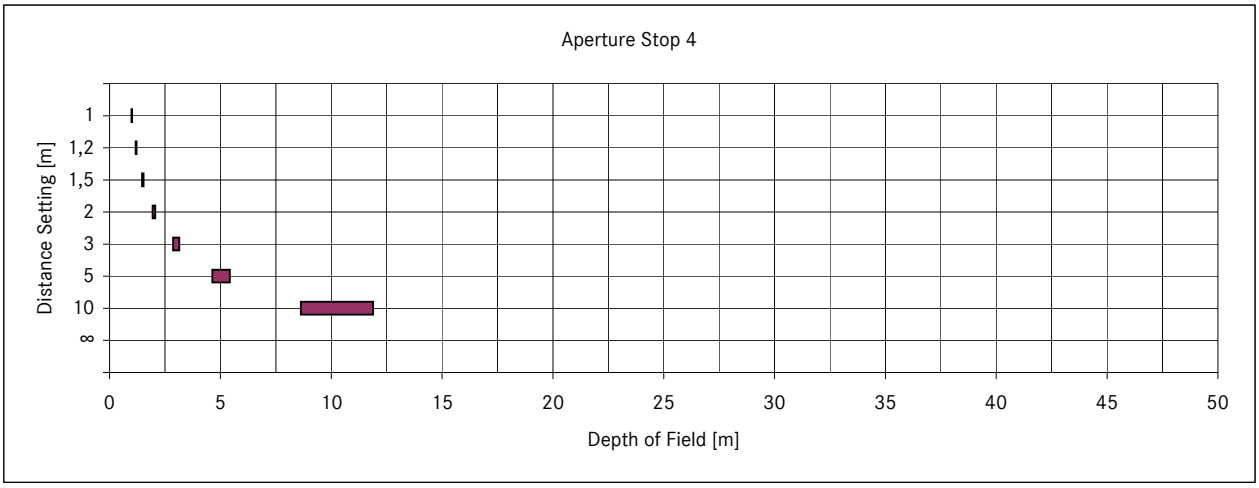
Vignetting is a continous decrease of the illumination to the edges of the image field. The graph shows the percentage loss of illumination over the image height. 100% means no vignetting.

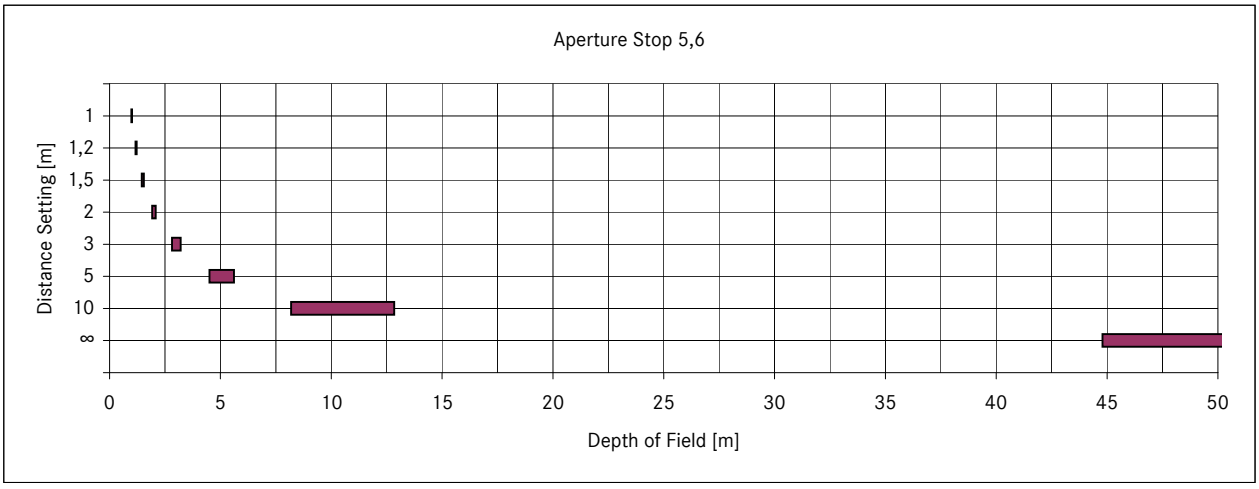
Depth of field table

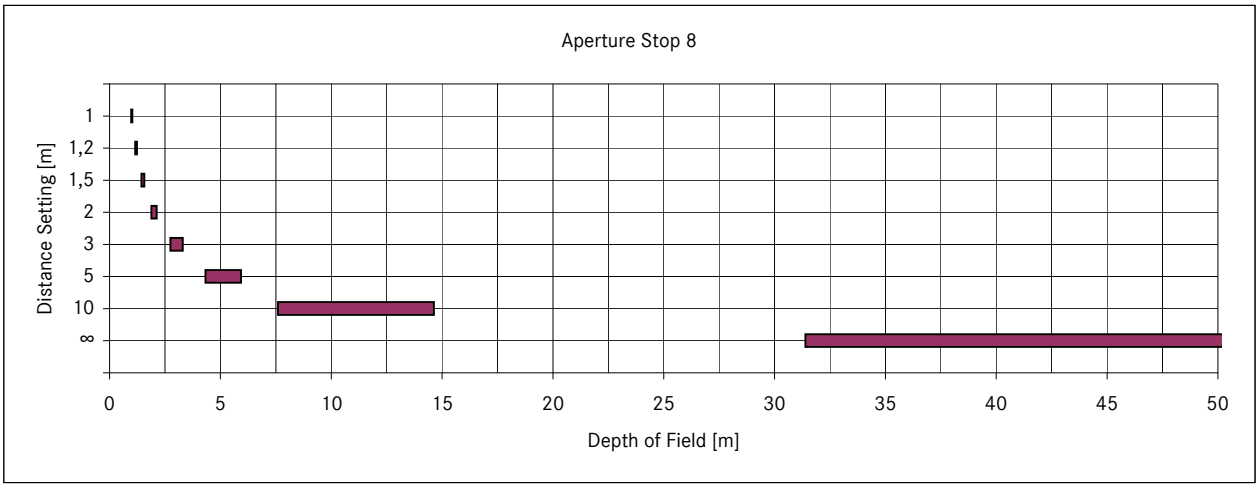
Distance Setting [m]	Aperture Stop 2,5	2,8	4	5,6	8	11	16	Magnification
1	0,991 - 1,009	0,990 - 1,010	0,986 - 1,015	0,980 - 1,021	0,972 - 1,030	0,962 - 1,042	0,945 - 1,062	1/8,9
1,2	1,186 - 1,214	1,185 - 1,215	1,179 - 1,222	1,171 - 1,231	1,159 - 1,244	1,144 - 1,262	1,121 - 1,292	1/11,1
1,5	1,479 - 1,522	1,477 - 1,524	1,467 - 1,535	1,454 - 1,549	1,435 - 1,571	1,412 - 1,600	1,376 - 1,649	1/14,4
2	1,962 - 2,040	1,958 - 2,044	1,941 - 2,063	1,918 - 2,090	1,885 - 2,131	1,845 - 2,184	1,782 - 2,280	1/20,0
3	2,913 - 3,092	2,905 - 3,102	2,866 - 3,147	2,816 - 3,210	2,745 - 3,309	2,660 - 3,442	2,530 - 3,689	1/31,0
5	4,762 - 5,263	4,739 - 5,292	4,636 - 5,427	4,505 - 5,619	4,322 - 5,933	4,113 - 6,380	3,807 - 7,297	1/53,0
10	9,087 - 11,12	8,999 - 11,250	8,632 - 11,89	8,186 - 12,85	7,597 - 14,64	6,971 - 17,73	6,130 - 27,35	1/108
∞	98,79 - ∞	89,21 - ∞	62,61 - ∞	44,79 - ∞	31,39 - ∞	22,85 - ∞	15,72 - ∞	1/∞

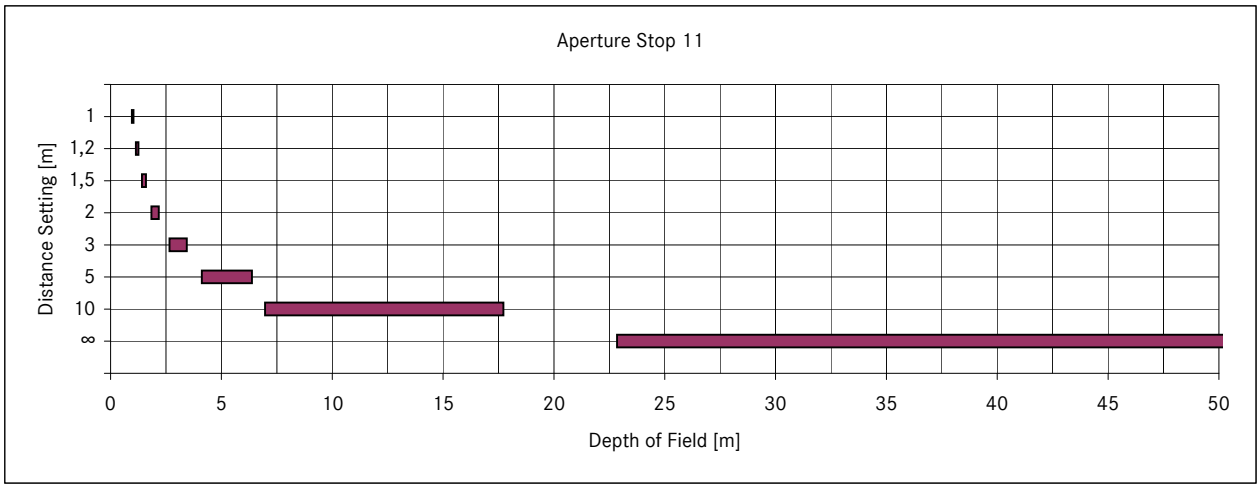


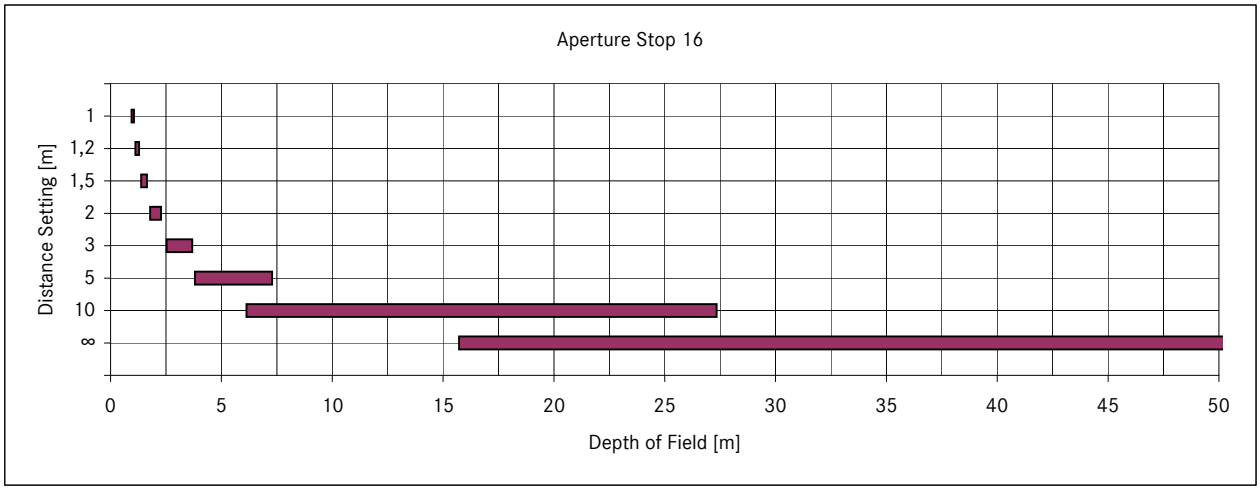



Aperture Stop 4
Distance Setting [m]
1
1,2
1,5
2
3
5
10
∞
0
5
10
15
20
25
30
35
40
45
50
Depth of Field [m]


Aperture Stop 5,6
Distance Setting [m]
1
1,2
1,5
2
3
5
10
∞
0
5
10
15
20
25
30
35
40
45
50
Depth of Field [m]


Aperture Stop 8
Distance Setting [m]
1
1,2
1,5
2
3
5
10
∞
0
5
10
15
20
25
30
35
40
45
50
Depth of Field [m]


Aperture Stop 11
Distance Setting [m]
1
1,2
1,5
2
3
5
10
∞
0
5
10
15
20
25
30
35
40
45
50
Depth of Field [m]


Aperture Stop 16
Distance Setting [m]
1
1,2
1,5
2
3
5
10
∞
0
5
10
15
20
25
30
35
40
45
50
Depth of Field [m]